

# Eaton 167120

Catalog Number: 167120

Eaton Moeller series xEffect - FRCmM-NA RCCB. Residual current circuit breaker (RCCB), 40A, 2p, 30mA, type G/A, UL



## General specifications

<b>Product Name</b>	<b>Catalog Number</b>
Eaton Moeller series xEffect - FRCmM-NA RCCB	167120
	<b>Model Code</b>
	FRCMM-40/2/003-G/A-NA
<b>EAN</b>	<b>Product Length/Depth</b>
4015081636136	80 mm
<b>Product Height</b>	<b>Product Width</b>
71 mm	35 mm
<b>Product Weight</b>	<b>Compliances</b>
0.22 kg	RoHS conform
<b>Certifications</b>	<b>Catalog Notes</b>
EN 61008 UL 1053 IEC 61008 ÖVE E 8601 EN45545-2 IEC 61373	Additionally protects against special forms of residual pulsating DC which have not been smoothed.

## Type

Current test marks as per inscription  
Maximum operating temperature is 75 °C:  
Starting at 40 °C, the maximum permissible continuous current decreases by 2.5% for every 1 °C  
The maximum operating current of back-up fuse must not exceed the residual current circuit breaker's rated operational current

## Special features

FRCmM-NA  
Residual current circuit breakers  
Type G/A (ÖVE E 8601)

## Application

Switchgear for export to North America (UL-listed)

## Amperage Rating

40 A

## Features

Residual current circuit breaker  
Additional equipment possible

### 10.10 Temperature rise

The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.

### 10.11 Short-circuit rating

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

### 10.12 Electromagnetic compatibility

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

### 10.13 Mechanical function

The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

## Application notes

[eaton-rcc-application-guide-br019003en-en-us.pdf](#)

## Brochures

[UL 1053 DIN Rail RCCB](#)

## Catalogs

[Eaton's Volume 4—Circuit Protection](#)

[eaton-xeffect-frcmm-na-rccb-catalog-ca003019en-en-us.pdf](#)

[eaton-xeffect-industrial-switchgear-range-catalog-ca003002en-en-us.pdf](#)

## Certification reports

[DA-DC-03\\_FRCm](#)

[03\\_FRCm.-NA\\_181019](#)

## Drawings

[eaton-circuit-breaker-xeffect-frcmm-na-rccb-dimensions.eps](#)

## eCAD model

[ETN.FRCMM-40\\_2\\_003-G\\_A-NA](#)

## Installation instructions

[MA180503312](#)

## mCAD model

[eaton-f9\\_ul1053\\_2p-drawing.dwg](#)

[eaton-f9\\_ul1053\\_2p-3-d-model.stp](#)

## Specifications and datasheets

[Eaton Specification Sheet - 167120](#)

## Wiring diagrams

[eaton-circuit-breaker-xeffect-frcmm-na-rccb-wiring-diagram.eps](#)

[eaton-xeffect-frcmm-rccb-wiring-diagram.jpg](#)

#### 10.2.2 Corrosion resistance

Meets the product standard's requirements.

#### 10.2.3.1 Verification of thermal stability of enclosures

Meets the product standard's requirements.

#### 10.2.3.2 Verification of resistance of insulating materials to normal heat

Meets the product standard's requirements.

#### 10.2.3.3 Resist. of insul. mat. to abnormal heat/fire by internal elect. effects

Meets the product standard's requirements.

#### 10.2.4 Resistance to ultra-violet (UV) radiation

Meets the product standard's requirements.

#### 10.2.5 Lifting

Does not apply, since the entire switchgear needs to be evaluated.

#### 10.2.6 Mechanical impact

Does not apply, since the entire switchgear needs to be evaluated.

#### 10.2.7 Inscriptions

Meets the product standard's requirements.

#### 10.3 Degree of protection of assemblies

Does not apply, since the entire switchgear needs to be evaluated.

#### 10.4 Clearances and creepage distances

Meets the product standard's requirements.

#### 10.5 Protection against electric shock

Does not apply, since the entire switchgear needs to be evaluated.

#### 10.6 Incorporation of switching devices and components

Does not apply, since the entire switchgear needs to be evaluated.

#### 10.7 Internal electrical circuits and connections

Is the panel builder's responsibility.

#### 10.8 Connections for external conductors

Is the panel builder's responsibility.

#### 10.9.2 Power-frequency electric strength

Is the panel builder's responsibility.

#### 10.9.3 Impulse withstand voltage

Is the panel builder's responsibility.

#### 10.9.4 Testing of enclosures made of insulating material

Is the panel builder's responsibility.

##### Fitted with:

Interlocking device

##### Frame

45 mm

##### Frequency rating

50 Hz / 60 Hz

##### Pollution degree

2

##### Used with

Type G/A (◆VE E 8601)

FRCmM-NA

Residual current circuit breakers

##### Mounting Method

Quick attachment with 2 latch positions for DIN-rail IEC/EN

60715

DIN rail

##### Climatic proofing

25-55 °C / 90-95% relative humidity according to IEC 60068-2

##### Equipment heat dissipation, current-dependent

7.8 W

##### Rated impulse withstand voltage (Uimp)

4 kV

##### Rated short-time withstand current (Icw)

10 kA

##### Admissible back-up fuse overload - max

40 A gG/gL

##### Ambient humidity range

5 - 95 %

##### Built-in width (number of units)

35 mm (2 SU)

##### Short-circuit rating

Max. admissible back-up fuse: 63 A gG/gL, 70 A class J fuse  
(UL)

##### Status indication

White / blue

##### Terminal protection

Finger and hand touch safe, DGUV VS3, EN 50274

Terminals (top and bottom)

Lift terminals

Test circuit range

184 V AC - 250 V AC, 196 V AC - 305 V AC (UL)

Ambient operating temperature - max

40 °C

Ambient operating temperature - min

-25 °C

Built-in depth

70.5 mm

Connectable conductor cross section (multi-wired) - max

16 mm<sup>2</sup>

Connectable conductor cross section (multi-wired) - min

1.5 mm<sup>2</sup>

Connectable conductor cross section (solid-core) - max

35 mm<sup>2</sup>

Connectable conductor cross section (solid-core) - min

1.5 mm<sup>2</sup>

Fault current rating

30 mA

Heat dissipation per pole, current-dependent

3.9 W

Overvoltage tested - max

530 V

Permitted storage and transport temperature - max

60 °C

Permitted storage and transport temperature - min

-35 °C

Contact position indicator color

Red / green

Mounting position

As required

Lifespan, mechanical

10000 operations

Degree of protection

IP20, IP40 with suitable enclosure

IP20

Impulse withstand current

3 kA (8/20  $\mu$ s) surge-proof

Number of poles

Two-pole

Leakage current type

A

Lifespan, electrical

4000 operations

Functions

Short-time delayed tripping

Pick-up current

22 mA

Sensitivity type

Pulse-current sensitive

Terminal capacity (cable)

M5 (with cross-recessed screw as defined in EN ISO 4757-Z2, PZ2)

Rated fault current - max

0.03 A

Rated fault current - min

0.03 A

Rated insulation voltage (Ui)

440 V

Rated operational current for specified heat dissipation (In)

40 A

Rated operational voltage (Ue) - max

277 V

Rated residual making and breaking capacity

500 A

Surge current capacity

3 kA

Width in number of modular spacings

2

Voltage rating (IEC/EN 60947-2)

240 V AC / 415 V AC

Voltage rating (UL)

480Y/277 V, 60 Hz

Voltage type

AC

Terminal capacity (solid wire)

1.5 mm<sup>2</sup> - 35 mm<sup>2</sup>

Tripping time

Short time-delayed

8 ms delay at 60 Hz

10 ms delay at 50 Hz

Rated short-circuit strength

10 kA with back-up fuse

5 kA (UL, as per CSA)

Terminal capacity (stranded cable)

16 mm<sup>2</sup> (2x)

RAL-number

7035



Eaton Corporation plc  
Eaton House  
30 Pembroke Road  
Dublin 4, Ireland  
Eaton.com

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